UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP - 6 2013

Lisa Evans
Senior Administrative Counsel
Earthjustice
111 South Martin Luther King Jr. Blvd.
Tallahassee, Florida 32301

Dear Ms. Evans:

Thank you for your two letters dated March 29 and June 17, 2013, expressing your concern about the use of a coal combustion residue (CCR) based material known as "EZBase" for road construction in Florida and Georgia. Your letters identified several instances in which you believe this material may have been misused, and you provided test results for two soil samples collected near EZBase application sites. Your letters request, among other things, that the EPA conduct testing of EZBase to better estimate its leaching potential using the EPA's new Leaching Environmental Assessment Framework (LEAF) leach tests.

While we understand that you have concerns about the use of EZBase in Florida and Georgia, states currently regulate the management of non-hazardous waste in their state, including beneficial use of wastes. In this particular case, it is my understanding that the Florida Department of Environmental Protection (FDEP) required testing of the beneficial reuse material, evaluated the results of that testing and determined that the proposed beneficial use was appropriate, conditioned on compliance with a number of use restrictions and installation requirements[1]. While it is my understanding that in the past there has been limited use of EZBase as roadbed in Georgia, it has not been approved for "beneficial use" by the Georgia Environmental Protection Division (GA EPD), and we have no information of any continued unapproved use of EZBase in Georgia. However, there is a current ongoing pilot project in Charlton County, Georgia approved by the GA EPD that is using EZBase as roadbed on forestry roads to see if it can be safely used for this purpose and approved as a "beneficial use."

Your letters cite as part of your concern a number of instances in which EZBase may have been misused; that is, applied in a use or manner not consistent with the FDEP restrictions and installation requirements. In at least one such incident, it is my understanding that the FDEP required the removal of material placed in, or too close to, a wetland.

[1] See letter of July 25, 2005, from Mary Jean Yon, Director, Division of Waste Management, FDEP, to Susan Hughs, V.P. Environmental Services, JEA. (Enclosure 1). For additional information regarding FDEP's analysis and approval of the beneficial use of EZBase, see March 24, 2008, letter from Mary Jean Yon, Director, Division of Waste Management, FDEP, to Alexander Livnat, Office of Solid Waste, U.S. EPA. (Enclosure 2). This approval letter was updated in a March 31, 2011, letter from Dotty Diltz, Acting Director, Division of Waste Management, FDEP, to Athena T. Mann, V.P. Environmental Services, JEA. (Enclosure 3).

The Agency does not routinely perform testing of wastes, as it is the generator's obligation to properly characterize and manage their wastes, and to comply with applicable state requirements with respect to the beneficial use of non-hazardous waste. In this case, the FDEP required an evaluation of EZBase, including testing, before allowing the use of EZBase. If, based on the information you have collected, you believe additional testing is warranted, or you believe that EZBase has been used in a manner inconsistent with FDEP's approval, your request and/or information is properly directed to the FDEP. Likewise, if you have concerns or information relating to the use of EZBase in Georgia, you should contact the GA EPD. The EPA has discussed this matter with and forwarded your letters and attached analytical information to Richard Tedder, Program Administrator, FDEP, and Jeff Cown, Branch Chief, Land Protection Branch, GA EPD. Mr.Tedder may be contacted directly at (850) 245-8735, and Mr. Cown may be contacted directly at (404) 362-2566.

With respect to your specific request that LEAF test methods be used to further analyze EZBase, this is certainly a testing method available for use by the states. The LEAF test methods are relatively new methods that have been developed by the EPA and recently posted on the EPA's analytical methods website, which provides methods that can be used for evaluation of waste. These new leach testing methods (Methods 1313-1316) have been designed to more accurately assess constituent leaching by considering the effect of several key parameters that vary in the environment and typically have a significant impact on leaching. The LEAF methods, therefore, can more accurately estimate leaching under actual or plausible disposal or reuse conditions. The EPA's most significant use of the methods to date is its evaluation of coal combustion residuals leaching potential. The LEAF test methods are fully validated and available for use in assessing the leaching potential of materials as reused or disposed.

Thank you for your interest in supporting the proper management of CCRs, including their beneficial reuse. Should you have additional questions, you can contact my office or Frank Ney in Region 4's RCRA Division at 404-562-9532.

Sincerely,

A. Stanley Meiburg
Acting Regional Administrator

Enclosures

cc: Barnes Johnson, U.S. EPA, Acting Director, ORCR
Greg Helms, EPA, OSWER
Jorge Caspary, Director, FDEP, Division of Waste Management
Richard Tedder, Program Administrator, FDEP
Jeff Cown, Branch Chief, GAEPD, Land Protection Branch

Department of
Environmental Protection

Jeb Bush
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Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 25, 2005

Ms. Susan Hughes, P.E.
Vice President Environmental Services
JEA
21 West Church Street, T-9
Jacksonville, Florida 32202-3139

RE: EZBase Beneficial Use Project Approval
JEA Northside Generating Station, Duval County

Dear Ms. Hughes:

This letter replaces both my letter dated April 1, 2005 and the letter dated December 3, 2004 from Mike W. Sole on the same subject. Rule 62-701.300(1), Florida Administrative Code (F.A.C.), prohibits any person from disposing of solid waste except at a permitted or exempt facility. Disposal is defined in Rule 62-701.300, F.A.C. to include the placing of any solid waste into or upon any land or water. At the same time, Section 403.7045(1), Florida Statutes (F.S.), authorizes the Department to exempt certain materials which are beneficially used from regulation as solid waste. These materials include industrial byproducts, which are regulated as solid waste unless three conditions are met:

1. A majority of the industrial byproducts are demonstrated to be sold, used, or reused within one year;
2. The industrial byproducts are not managed so as to create a threat of environmental contamination; and
3. The industrial byproducts are not hazardous wastes.

Based upon the documentation you have provided, the Department finds that the following proposed project constitutes a beneficial use of an industrial byproduct, and that the storage and use of this industrial byproduct is not prohibited by Chapter 62-701, F.A.C. Furthermore, the Department agrees that the industrial byproduct used in the following proposed project is not considered solid waste and will not be regulated as such. You should be aware, however, that any other uses of the material which involve placing it into or upon any land or water may be considered disposal of solid waste by the Department. For this reason, we strongly recommend that any person wishing to beneficially use the industrial byproduct, in a manner other than approved below, first seek the concurrence of the Department that such use does meet the exemption criteria in the statute.

Proposed Project

JEA has submitted a Beneficial Use Demonstration addressing several proposed uses for a byproduct material generated in the circulating fluidized bed (CFB) boilers at their Northside Generating Station. The fuel for the CFB boilers consists of petroleum coke blended with pulverized coal, typically in ratios of 80 percent petroleum coke to 20 percent coal. Limestone is also added to create thermal mass for the fluidized bed and to provide a scrubbing medium for removal of sulfurous gases. The resulting CFB byproduct material has cement-like properties when compacted at the proper moisture content. This material will be marketed as "EZBase." For each beneficial use project, the EZBase is trucked directly to the area of intended use and installed, rather than being stockpiled at the job site. EZBase may be used as conditioned below in the following applications, provided that it is used only in the amounts needed to achieve the design structural strength for the project based upon normal civil engineering practice, or as may otherwise be specifically required by the Department in a remedial project:

1. Final top surface for roads, parking lots, lay down yards and similar industrial and commercial applications using compacted EZBase either alone or with stone (such as granite or limestone) or asphalt millings rolled into the top surface;
2. Compacted as a base course for civil applications in accordance with Florida Department of Transportation (FDOT) Standard Specification Section 200, where the EZBase will be covered with a friction surface (final top surface) such as asphalt or concrete or compacted EZBase;
3. Stabilized base course (meeting compaction requirements) for civil applications in accordance with FDOT Standard Specification Sections 160 and 230, where a final top surface such as asphalt or concrete or compacted EZBase will be used;
4. Mixed with existing limestone base for civil applications in compliance with FDOT Standard Specification Section 210, where a final top surface such as asphalt or concrete or compacted EZBase will be used; and
5. Used in stabilization processes for remedial projects where access controls (engineering and/or institutional) are in place and where the remedial project has been reviewed and approved by the Department.

In order to assure that this material is not managed so as to create a threat of environmental contamination, JEA shall provide written documentation to all EZBase purchasers which includes at least the following:

1. A list of the approved beneficial uses of EZBase;
2. A description of the proper procedures for transportation, storage and management of EZBase prior to its intended beneficial use;
3. A recommendation that EZBase should not be stored or used as a final top surface immediately adjacent to sensitive wetlands unless measures are in place to minimize stormwater runoff into the wetlands; and
4. A recommendation that EZBase, either alone or mixed with other materials, should not be used in contact with ground water or surface water bodies.

This approval is also conditioned on the following additional actions by JEA.

1. JEA shall conduct three additional monthly sampling events (July, August and September 2005) of ground water at the four pads at Brandy Branch (of the upgradient and nearest downgradient wells for the asphalt over EZBase, limerock and concrete pads and of all four monitoring wells for the EZBase pad) analyzing for iron, sulfate, ORP, turbidity and pH. If no significant increases are detected after these three events, JEA may terminate this monthly monitoring.
2. To monitor the chemical characteristics of the product, every quarter JEA shall collect two representative, composite samples of newly produced EZBase and analyze them for total concentrations of aluminum, arsenic, iron, lead and vanadium. JEA shall compare these results to the EZBase total analyses conducted during the characterization study. If this comparison shows that a significant increase in chemical concentrations in EZBase has occurred, or if there is a significant change in the operation of the CFB boilers that could adversely affect the chemical quality of the EZBase product, then JEA shall notify the Department and conduct additional testing if necessary to ensure that continued use of EZBase will not result in any adverse environmental or human health effects.
3. JEA shall maintain records for a minimum of three years, and make them available to the Department upon request, that include the following information:
   - Name of the purchaser or contractor who is beneficially using the EZBase;
   - Number of tons of EZBase purchased by each purchaser or contractor; and,
   - The test results required in conditions 1 and 2 above.

The Department recognizes and appreciates the significant effort JEA has exerted to obtain research data and documentation to justify this beneficial use approval for EZBase. Based on this research, the Department believes the use of EZBase as described above will have a net environmental benefit to the state of Florida. This approval letter, however, applies only to the engineered uses of EZBase listed above and does not apply to other means of storage or management on-site of the CFB ash.

If you have any questions, please feel free to contact Mr. Richard Tedder at (850) 245-8735.

Sincerely,

Mary Jean Yon, Director
Division of Waste Management

MJY/rt

cc: Bill Green – NE District

Florida Department of
Environmental Protection
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

March 24, 2008

Mr. Alexander Livnat
Office of Solid Waste (5306P)
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0002

ATTN: Docket ID No. EPA-HQ-RCRA-2006-0796

Dear Mr. Livnat:

The purpose of this letter is to respond to comments made by the Sierra Club in their February 11, 2008 letter to the Environmental Protection Agency (EPA) concerning the "Notice of Data Availability (NODA) on the Disposal of Coal Combustion Wastes in Landfills and Surface Impoundments," 72 FR 49714 (August 29, 2007). The Florida Department of Environmental Protection (Department) believes the Sierra Club has misunderstood the way coal combustion waste (CCW) is managed in Florida and some clarifications are warranted. We also believe that CCW is currently managed and beneficially used in Florida in ways that are protective of human health and the environment and that it is not necessary for the EPA to promulgate new regulations for managing these wastes.

We apologize for the sending this letter after the closing date for comments on the NODA, but we did not know of the Sierra Club letter until after February 11th. The four comments made by the Sierra Club are repeated below (in bold type) and then followed by our responses.

1. **Florida DEP approved on December 3, 2004, April 1, 2005 and July 25, 2005, the use of ash from burning coal and petroleum coke for road base and rural roads throughout the state. According to FDEP, ash is currently used at a rate of 80,000 tons per month. Coal ash has been known to leach harmful quantities of hazardous constituents (such as arsenic) when used for road base, particularly if the road remains unpaved and the material is used near shallow aquifers. State testing has been insufficient to guarantee safety of the environment and public health particularly in view of the large quantities of waste involved in this "beneficial" reuse project.**

Response to #1: The Sierra Club is referring to a material produced from CCW by JEA in Jacksonville, Florida and marketed under the name EZBase. The Sierra Club implies using this ash may cause groundwater contamination, particularly from arsenic, and that the Department has not conducted sufficient testing to determine if this material can be beneficially used in a safe manner. We do not believe these statements are correct. We will clarify by providing some background on the actual research that was conducted for this material and the decision process the Department used to approve its beneficial use.

JEA operates two 300-megawatt circulating fluidized bed (CFB) combustors that burn a fuel mixture of approximately 80 percent petroleum coke and 20 percent pulverized coal. Limestone is also added to created thermal mass for the fluidized bed and to provide a scrubbing medium for removal of sulfurous gases. Due to the high combustion temperatures in the fluidized bed, some of the limestone is converted to calcium oxide which gives the CFB ash (a mixture of bed ash and fly ash) cementing properties when it is aged and compacted at the proper moisture content.

In November, 2003, JEA requested permission from the Department to use their CFB ash in road construction and industrial lay down yards. At the Department's request, JEA began a series of environmental studies to evaluate the likelihood that this use would result in unacceptable risks to human health or the environment. Analytical tests were conducted to evaluate the total metal and leachable metal concentrations that could be expected from the CFB ash. Four test pads were also constructed of the following materials: (1) compacted CFB ash covered with asphalt; (2) uncovered, compacted CFB ash; (3) compacted limestone; and (4) concrete. These test pads were then monitored to evaluate their impacts to groundwater, surface water and soils adjacent to the pads.

While arsenic was present in the CFB ash at an average total concentration of 3.9 mg/kg, it was not detected in any of the SPLP leaching tests or surface water runoff tests (using a detection level of 0.01 mg/L). The Department thus concluded that it was unlikely that arsenic would leach out of the material in concentrations that would exceed ground water quality standards. The primary contaminate of concern found in the CFB ash was vanadium, with an average total concentration of 2,525 mg/kg. It was also leaching from the CFB ash in SPLP tests at an average concentration of 0.064 mg/L and appearing in unfiltered samples of surface water runoff from the uncovered CFB ash test pad at an average concentration of 0.16 mg/L. However, vanadium was not detected in any of the groundwater samples that were collected during the study period for the test pads. These monitoring wells were located close to the test pads and would have detected any vanadium that had moved through the soils and into groundwater.

Due to its cementing properties, the compacted CFB ash was found to have 60-day compressive strengths of up to 500 lb/in^2. The Department determined that this property made it unlikely that there would be any significant human health risks from direct contact with arsenic or vanadium in the compacted CFB ash. The monitoring of the test pads showed there was not expected to be any adverse impact to groundwater from using this ash. The surface water runoff data from the uncovered, compacted CFB ash test pad suggested there could be enrichment of vanadium concentrations above the Department's residential direct exposure target levels in soils immediately adjacent to roads constructed with this material if left uncovered. However, the increase in concentrations would be well below the Department's industrial direct exposure levels. Furthermore, since exposure assumptions associated with a residential scenario do not apply to soil immediately adjacent to roads, and since the presence of motor vehicles on the roads (with their obvious danger to individuals nearby) should significantly reduce the level of contact envisioned by the residential scenario, the Department determined that possible enrichment of vanadium concentrations immediately adjacent to roads using uncovered CFB ash was acceptable in this limited application.

Therefore, based on the test results from these studies, the Department determined that this material could be beneficially used in ways that would be protective of human health and the environment. Consequently, the Department issued approval letters for using the compacted CFB ash. The most recent one, which reflects the latest and current revisions, is dated July 25, 2005 and is enclosed for your information. In general, the Department allowed the use of this ash in sub-bases and top surfaces for roads, industrial lay down yards and parking lots provided it was compacted at the proper moisture content and not placed in the water. In addition, uses in uncovered applications were not allowed adjacent to sensitive wetlands without first installing control measures to minimize stormwater runoff into the wetlands. When used in this manner, the Department agreed this material was no longer regulated as a solid waste.

JEA began marketing this material in 2006 and over the past two years has sold **approximately 700,000 tons of EZBase, or 30,000 tons per month. The Department continues to believe that this material, when used as approved, results in a net environmental benefit to the state and does not pose an unacceptable human health or** environmental risk. Nonetheless, we continue to work closely with JEA to make sure that the material is properly applied and to evaluate any potential environmental threats that might arise from its application or use.

2. **Florida law provides exemption from solid waste permitting for onsite disposal of CCW. It is not clear that the law requires basic safeguards such as liners,**

groundwater monitoring, leachate collection, financial assurance, etc at all CCW landfills and surface impoundments in the state.

Response to #2: Section 403.707(2)(c), Florida Statutes, creates a permitting exemption for "disposal by persons of solid waste resulting from their own activities on their property," but only when such disposal is addressed or authorized under another Department permit or certification. All on-site CCW disposal units currently operate only under a Department permit or power plant site certification.

There is no specific exemption in Department rules applying to the storage or disposal of CCW. Currently, the Department evaluates any applications for CCW disposal units on a case-by-case basis, and requires the applicant to provide reasonable assurance that such units will not cause pollution in violation of Department water quality standards. While the Subtitle D landfill standards contained in our solid waste rule, Chapter 62-701, Florida Administrative Code, do not automatically apply, some or all of these standards may apply in individual cases. The two most recent CCW on-site disposal units constructed in the state included liner systems with leachate controls. The Department is working on a rule to clarify what standards will apply to industrial waste disposal units in Florida, including those that dispose of CCW.

3. **A recent FDEP study (enclosed) shows that leaching of hazardous constituents from CCW is indeed occurring at Florida utilities and that these pollutants, such as arsenic and boron, are entering the groundwater in quantities that, in several instances greatly exceed federal drinking water standards.**

Response to #3: The draft March 18, 2003 report mentioned by the Sierra Club summarized data contained in the 1999 Report to Congress on fossil fuel combustion wastes and data from two on-site CCW disposal units in Florida. The Department agrees that the data from the two on-site disposal units in Florida showed environmental damage. This information will be helpful in the Department's rulemaking effort to develop standards for these disposal units. However, these two units were authorized and constructed years ago and do not represent the way these wastes are typically managed in Florida today. It is also important to point out that this report does not apply to the beneficial use approval given to JEA's EZBase.

4. **It has been practice recently of some utilities, notably the JEA of Jacksonville, Florida, to offer for use CCW ash as road base and fill. It is our recommendations that the EPA investigate the safety of such use of CCW.**

Response to #4: As mentioned above, the Department has approved the use of JEA's CFB ash in road construction, but it has not approved its use as fill nor is it willing to do so. The Department believes the data generated for the CCW produced by JEA justifies allowing its beneficial use in road construction projects where it is properly compacted and located.

Thank you for being willing to receive our responses. We will continue to ensure that CCW is properly managed in Florida. If you have any questions, please feel free to contact me at (850) 245-8690 or Richard B. Tedder, P.E. at (850) 245-8735.

Sincerely,

Mary Jean Yon, Director
Division of Waste Management

MJY/rt

Enclosure

cc: Alan Farmer, Director, EPA Waste Management
Mike Petrovich, Attorney, Hopping, Green and Sam
Thomas C. Larson, Sierra Club
Chris McGuire, Attorney, OGC

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Rick Scott
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Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

March 31, 2011

Ms. Athena T. Mann
Vice President Environmental Services
JEA
21 West Church Street, T-16
Jacksonville, Florida 32202-3139

Dear Ms. Mann:

Rule 62-701.300(1), Florida Administrative Code (F.A.C.), prohibits any person from disposing of solid waste except at a permitted or exempt facility. Disposal is defined in Section 403.703(9), Florida Statutes (F.S.) and Rule 62-701.300, F.A.C. to include the placing of any solid waste into or upon any land or water. At the same time, Section 403.7045(1)(f), F.S., exempts industrial byproducts from regulation as solid waste if three conditions are met:

1. A majority of the industrial byproducts are demonstrated to be sold, used, or reused within one year;
2. The industrial byproducts are not managed so as to create a threat of contamination in excess of applicable department standards and criteria, or to cause a significant threat to public health; and
3. The industrial byproducts are not hazardous wastes.

In 2004, JEA submitted a Beneficial Use Demonstration addressing several proposed uses for an industrial byproduct generated in the circulating fluidized bed (CFB) boilers at JEA's Northside Generating Station. JEA proposed to market this byproduct as "EZBase" or "EZBase Plus" (hereinafter "EZBase"). The fuel for the CFB boilers consists of petroleum coke blended with pulverized coal, typically in ratios of 80 percent petroleum coke to 20 percent coal. Limestone is added to create thermal mass for the fluidized bed and to provide a scrubbing medium for removal of sulfurous gases. The resulting CFB byproduct material has cement-like properties when compacted at the proper moisture content.

In the Beneficial Use Demonstration, and in subsequent communications, JEA requested the Department's opinion as to whether certain proposed uses of EZBase would qualify for the statutory exemption discussed above. On December 3, 2004, April 1, 2005, and July 25, 2005, the Department issued letters agreeing that various proposed uses would qualify for this exemption. Based upon additional information and experience since those letters were written, the Department is now modifying its opinion, and this letter supersedes all previous letters on the subject as follows.

Based upon the documentation JEA has provided, the Department agrees that EZBase is statutorily exempt from regulation as solid waste when managed in accordance with the specifications outlined below. Any other uses of the material that involve placing it into or upon any land or water may not be considered exempt and therefore may constitute disposal of solid waste. We strongly recommend that any person wishing to use any industrial byproduct, or wishing to use EZBase in any manner other than as specifically described below, first seek the concurrence of the Department that such use meets the exemption criteria in the statute. Please be aware that neither this letter nor the statutory exemption releases any person from liability for causing pollution or violating any other state or federal regulations or local ordinances.

PROPOSED PROJECTS

For each proposed use below, JEA agrees that EZBase will be transported directly to the area of intended use and generally installed rather than being stockpiled at the job site. In no case will the material be stockpiled for longer than four weeks at any project site prior to use. It will be used only in the amounts needed to achieve the design structural strength for the project based upon normal civil engineering practice, or as may otherwise be specifically required by the Department in a remedial project.

In order to ensure that management of EZBase meets the statutory exemption criteria for industrial byproducts, JEA agrees to provide written documentation to all EZBase purchasers that includes at least the following:

1. A list of the allowable uses of EZBase as specified below;
2. A description of the proper procedures for transportation, storage and management of EZBase prior to its intended beneficial use;
3. A statement that EZBase must not be stored within 25 feet of a wetland (as defined in Rule 62-340, F.A.C.) unless measures are in place to prevent stormwater runoff into the wetlands; and
4. A statement that EZBase, either alone or mixed with other materials, must not be used in contact with ground water or surface water bodies.

A. Approved Uses

JEA has proposed to market EZBase in the following types of approved projects, subject to the specific conditions set forth in Section B of this document if EZBase is used as a final top surface:

1. Final top surface for roads, parking lots, laydown yards, and similar industrial and commercial applications using compacted EZBase either alone or with stone (such as granite or limestone) or asphalt millings rolled into the top surface;
2. Compacted as a base course for civil applications in accordance with Florida Department of Transportation (FDOT) Standard Specification Section 200, where the EZBase will be covered with a friction surface (final top surface) such as asphalt, concrete or compacted EZBase;
3. Stabilized base course (meeting compaction requirements) for civil applications in accordance with FDOT Standard Specification Sections 160 and 230, where a final top surface such as asphalt or concrete or compacted EZBase will be used;
4. Mixed with existing limestone base for civil applications in compliance with FDOT Standard Specification Section 210, where a final top surface such as asphalt or concrete or compacted EZBase will be used; and
5. Used in stabilization processes for remedial projects where access controls (engineering and/or institutional) are in place and where the remedial project has been reviewed and approved by the Department.

B. Specific Conditions - EZBase as a Final Top Surface

Because some uncovered uses of EZBase may create conditions that would not meet the statutory exemption criteria for an industrial byproduct, JEA agrees that uncovered uses of EZBase, i.e., as a final top surface, will be limited to the following:

1. EZBase will be installed only by JEA or its agents, JEA Certified EZBase Contractors, the Florida Department of Transportation, or county and city transportation departments. In no case will JEA convey EZBase to any other person for use in uncovered applications.
2. EZBase will not be stored or used on residential property, or on commercial property the current use of which is for a preK-12 school or a day care center. This does not preclude use on public roads in residential areas.
3. Only material that is marketed as EZBase or EZBasePlus, and meets the specifications found in Attachment 1, will be used in such projects.
4. An upland buffer with a minimum width of 15 feet and an average width of 25 feet or more must exist between an EZBase application or storage pile and

any wetland (as defined in Rule 62-340, F.A.C.), except for roadside conveyances designed to manage storm water from the road.

5. EZBase will not be used in contact with ground water or surface water bodies.
6. EZBase will not be used within 500 feet of surface waters that routinely flood outside their banks. Examples of such surface waters in North Florida are the Suwannee River, Santa Fe River, Ichetucknee River, St. Marys River, Withlacoochee River and Black Creek.
7. EZBase will not be used within 25 feet of any potable water well.

C. Monitoring and Recordkeeping

To monitor the chemical characteristics of the product, every quarter JEA agrees to collect two representative, composite samples of newly produced EZBase and analyze them for total concentrations of aluminum, arsenic, iron, lead and vanadium. JEA will compare these results to the EZBase total analyses conducted during the characterization study. If this comparison shows that a significant increase in chemical concentrations in EZBase has occurred, or if there is a significant change in the operation of the CFB boilers that could adversely affect the chemical quality of the EZBase product, then JEA will notify the Department and conduct additional testing if necessary to ensure that continued use of EZBase will not result in any adverse environmental or human health effects.

JEA agrees to maintain records for a minimum of three years, and submit such records to the Department at least quarterly, that include the following information:

1. Name of each purchaser or contractor who is using EZBase;
2. Number of tons of EZBase purchased by each purchaser or contractor;
3. Parcel ID number, name of property owner and address for the site on which EZBase has been installed;
4. How the product was used at each property; and,
5. The monitoring results described above.

This letter is not intended to propose or take any agency action, to require any actions by JEA or other parties, or to create or abrogate any rights of JEA or other parties. It is intended solely to set forth the Department's opinion as to the applicability of a statutory permitting exemption. The Department has not determined that any proposed uses of EZBase will actually function as advertised, nor that any proposed uses of EZBase will never actually cause any environmental contamination or significant threat to public health. The Department has also not determined that any uses of EZBase other than those described herein cannot qualify for the statutory exemption.

By its signature below, JEA acknowledges that this letter accurately represents the proposed uses of EZBase for which JEA requested Department review. JEA also acknowledges that any uses of EZBase that do not conform with the proposed projects as described in this letter cannot be considered to have been reviewed or approved by the Department, and may constitute disposal in violation of the provisions of Part IV of Chapter 403, Florida Statutes.

Attached to and incorporated into this document are installation guidelines and procedures and product specifications of the type JEA will provide to installation contractors and/or product purchasers any time EZBase is sold for a particular project. Any substantive changes to these documents must be approved by DEP.

Dotty Diltz, Acting Director
Division of Waste Management

FOR JEA:

Athena T. Mann [Type or Print Name], hereby acknowledges that this letter accurately represents the proposed uses of EZBase for which JEA requested Department review.

By: ATMann Date: 4/6/11

Title: VP Environmental Services

Attachments:

1. EZBase/EZBasePlus Product Specification
2. EZBase/EZBasePlus as a Final Top Surface (Uncovered) Installation Guide

ATTACHMENT 1

EZBase/EZBasePlus Product Specification

EZBase® / EZBase+ PLUS

PRODUCT SPECIFICATION

General Information

EZBase® is a product processed from the byproduct from the circulating fluidized bed (CFB) boilers located at the JEA Northside Generating Station (NGS). These CFB's are fueled by a combination of coal and petroleum coke. Limestone is added during the power generation process to create thermal mass and to aid in the removal of sulfurous gas emissions. At the conclusion of this generation process, two dry byproducts are generated, fly ash and bed ash. These byproducts are mixed with water to create a slurry that is further processed into the value-added product, EZBase.

Byproduct from a solid fuel CFB plant, such as the JEA NGS facility, is distinct from that of conventionally fired boilers (e.g., pulverized coal, fuel oil) because it is composed primarily of lime and gypsum (calcium oxides and calcium sulfate, respectively). Less than 10% by weight of CFB byproduct actually represents what would generally be termed "ash" from combustion of traditional fossil fuels. Over 90% by weight of CFB byproduct is a result of the addition of limestone to the boilers. Thus, the byproduct from a CFB plant is not "ash" in the typical sense, and is not solely the remnant material from conventionally-fired boilers. As noted, the EZBase is primarily lime and gypsum which gives it excellent cementitious properties that allow it to be used in construction applications where limestone, cement and concrete would otherwise be used.

EZBase Properties

The processed EZBase will have the following typical properties at loading.

- Color: Dark gray
- Typical dry density -- 76 to 86 lb/cu ft.
- Typical moisture content at loading -- 15 to 30 percent
- Typical available lime content at loading -- >10 percent
- Milled to 3-1/2 inch minus sizing *
- Plasticity: Non-plastic per ASTM D4318 or AASHTO T89, 90
- Typical limestone bearing ratio (LBR): >100 (FM 5-515)
- Approximate saturated permeability of compacted material: 10^{-7} cm/sec

*During storage and loading at the JEA EZBase production facility, the material will re-agglomerate into larger sizes (chunks) while still retaining acceptable moisture content. The EZBase chunks will break up easily during installation. If allowed to dry, the EZBase chunks will harden.

EZBasePlus Properties

EZBasePlus is EZBase blended with other materials to increase the mechanical properties, and reduce the moisture sensitivity, of EZBase. EZBasePlus has been successfully blended with limestone and granite with excellent results. Very large high volume/high loading base applications have been constructed utilizing EZBasePlus.

The processed EZBasePlus will have the following typical properties at loading (note that EZBase (60%) blended with limestone (40%), by weight, is used for this example of typical properties).

- Color: Light gray
- Typical maximum dry density -- 95 to 110 lb/cu ft.
- Typical moisture content at loading -- 10 to 25 percent
- Milled to 3-1/2 inch minus sizing*
- Plasticity: Non-plastic per ASTM D4318 or AASHTO T89, 90
- Typical limerock bearing ratio (LBR): >150 (FM 5-515)
- Approximate saturated permeability of compacted material: 10^{-7} cm/sec

*During storage and loading at the JEA EZBase production facility, the material will re-agglomerate into larger sizes (chunks) while still retaining acceptable moisture content. The EZBasePlus chunks will break up easily during installation. If allowed to dry, the EZBasePlus chunks will harden.

ATTACHMENT 2

EZBase/EZBasePlus as a Final Top Surface (Uncovered) Installation Guide

EZBase® / EZBase+ PLUS®

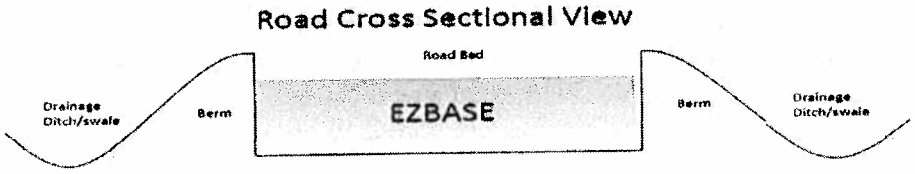
FINAL TOP SURFACE (UNCOVERED) INSTALLATION GUIDE

This use guide is a general instruction for installing EZBase for uncovered applications and should not be used in place of project specific engineering direction. For more comprehensive instructions, refer to the EZBase/EZBasePlus As a Final Top Surface Application Specification available at ezbase.org or by calling (904) 665-4952. Authorization from the material supplier to utilize EZBase does not constitute prior approval by local, state or federal regulatory agency or other authorities, that may be required for the use of this material. Buyer of the material shall be responsible for obtaining any and all such approvals in advance of using the material and shall comply with all local, state, and federal environmental compliance requirements, including but not limited to, these relating to stormwater and wetlands.

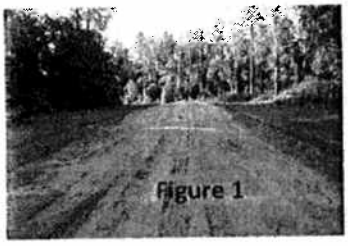
General Construction Procedure

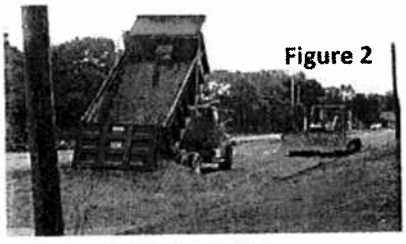
1. Material Handling and Storage
   a. Once delivered to the job site, EZBase should be placed and compacted as soon as possible.
   b. Material should not be stockpiled on the jobsite.
   c. Appropriate measures should be taken to maintain moisture, avoid stormwater runoff and minimize dusting from staged material at the job site. Staged material that has not been used after 4 weeks should be returned to the material supplier.
2. Initial Preparation
   a. By either "pulling" the drainage ditch/swale or undercutting the road bed, create a berm on both sides of the road to contain the EZBase. The berm should contain the EZBase at a uniform width and depth, similar to using forms for pouring concrete, where the EZBase will be placed so the compactor can reach and properly compact the entire area of the EZBase (Figure 1).
   b. Perform further shaping required to obtain crown and grade.
   c. It is recommended that the sub-base surface be damp prior to the placement of EZBase to prevent excessive loss of moisture due to absorption.

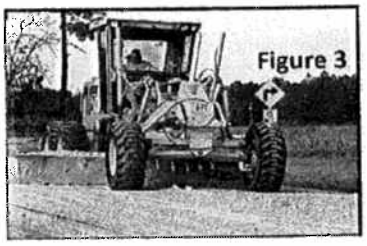
Figure 1



3. Product Installation
   a. Directly apply the specified amount of EZBase on top of the prepared section as noted in the specification or as directed by the Engineer. (Figure 2)
   b. The EZBase layer should not exceed 18 inches. A compacted single layer of EZBase should not exceed 6 inches. If the design requires additional thickness, then layers should be installed 6 inches at a time, with no single layer less than 3 inches thick. Additional layers should be installed within 72 hours of the previous and the under layer surface should be dampened before applying the next layer.
   c. Evenly distribute the EZBase. Use of a motor grader or bulldozer is suggested to get even distribution. (Figure 3)
   d. Special care should be taken to avoid deposition of EZBase in adjoining ditches or swales and any loose EZBase should be immediately removed from ditches or swales.
   e. No EZBase should be installed that will not be compacted at the end of the work day.







4. Compacting
    a. Utilize proper compaction equipment until all installed EZBase area is compacted. No installed EZBase should remain uncompacted at the end of the work day.
    Some contractors have found that the use of a pneumatic roller is beneficial in achieving the required level of compaction (Figure 4).

    b. After compaction, the material is capable of handling immediate traffic.
5. Finishing
    a. Dress and finish as required

figure 4

Environmental Considerations – Uncovered Applications

- EZBase shall be separated from ground water and surface water bodies. A surface water body includes, but is not limited to, rivers, streams, ponds, lakes, etc. A six inch (6") separation from the seasonal high water table is required.
- EZBase as a final top surface shall not be used on residential property.
- EZBase as a final top surface shall not be used within 25 feet (25') of any potable water well.
- EZBase as a final top surface shall not be used within a minimum of 15 feet (15') and average of 25 feet (25') from any wetland unless the application site is permitted by the appropriate regulatory agency or agencies.
- EZBase is specified to be used "on-demand" and not stockpiled. Staged material should be of sufficient quantity to support the project and not stockpiled for extended periods of time. Staged material that has been untouched for over four weeks should be returned to the material supplier. Staged material shall not be placed within a minimum of 15 feet (15') and average of 25 feet (25') from any wetland or surface water.
- EZBase is delivered at optimum moisture. The mechanical and environmental performance of EZBase is dependent upon proper compaction. EZBase should be compacted directly following delivery and application. No installed EZBase should remain un-compacted at the end of the work day.
- Standard civil construction best management practices (BMP) shall be used when installing EZBase to avoid stormwater or fugitive dust releases. Florida Department of Environmental Protection (FDEP) National Pollutant Discharge Elimination System (NPDES) rules applicable to construction may be referenced on-line at http://www.dep.state.fl.us/water/stormwater/npdes/
- Standard BMP's shall be used to avoid the deposition of EZBase into ditches or swales during placement or from staged material
- EZBase has potential health implications similar to those of other traditional construction materials (limerock, cement, lime, sand, etc.). Standard BMP's should be utilized to avoid excessive inhalation of dust or continuous contact with skin. The Material Safety Date Sheet (MSDS) may be obtained from a JEA representative or online at ezbase.org.

EZBase

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EZBase PLUS